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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,738	01/23/2002	Eiji Sato	10517/115	3279
23838	7590	04/23/2004	EXAMINER	
KENYON & KENYON 1500 K STREET, N.W., SUITE 700 WASHINGTON, DC 20005			FLETCHER, MARLON T	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/052,738	Applicant(s) SATO ET AL.	
	Examiner Marlon T Fletcher	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,5,7-10 and 12-14 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondou et al. (6,377,017) in view of Kimura et al. (5,739,650) and Atarashi (6,700,400).

As recited in claims 1 and 10, Kondou et al. disclose a driver circuit for driving a permanent-magnet electric motor, comprising: an inverter (13) for generating an electric current to be applied to the permanent magnet motor, according to a commanded voltage value applied thereto; a motor-drive-current detector (16, 17) operable to detect the drive current of the motor; a current detector operable to detect a d-axis current and a q-axis current which are respectively an exciting current component and a torque current component of the detected drive current (column 5, lines 33-45); and a controller operable to calculate a d-axis current difference between the detected d-axis current and a commanded d-axis current value, and a q-axis current difference between the detected q-axis current and a commanded q-axis current value, said controller being further operable to calculate a d-axis difference signal which is a function of a d-axis input voltage of the motor and is not a function of a q-axis input voltage of the motor, and a q-axis difference signal which is a function of the q-axis input voltage and is not a function of the d-axis input voltage, said controller controlling said inverter on the basis

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of the calculated d-axis and q-axis difference signals, such that the d-axis and q-axis difference signals are zeroed (column 5, line 46 through column 6, line 10). Kondou et al. (as recited in claims 5 and 9) further, disclose a current-difference calculator (41) operable to calculate a d-axis current difference between the detected d-axis current and a commanded d-axis current value, and a q-axis current difference (42) between the detected q-axis current and a commanded q-axis current value; a non-interference processor (43) operable to calculate a d-axis difference signal which is a function of a d-axis input voltage of the motor and is not a function of a q-axis input voltage of the motor, and a q-axis difference signal which is a function of the q-axis input voltage and is not a function of the d-axis input voltage; and an inverter controller (46, 47) operable to control said inverter on the basis of the calculated d-axis and q-axis difference signals, such that the d-axis and q-axis difference signals are zeroed (column 7, line 55 through column 8, line 20).

Kondou et al. do not use X_d as the d-axis difference signal and x_q as the q-axis difference signal, based on factors including inductance and resistance.

However, Kimura et al. disclose a X_d as the d-axis difference signal and x_q as the q-axis difference signal, based on factors including inductance and resistance as a well known teaching as discussed in column 3, line 50 through column 4, line 10.

Atarashi disclose the d-axis difference signal and the q-axis difference signal, based on factors including inductance and resistance as discussed in column 21, lines 49-55.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Kimura et al. and Atarashi with the apparatus of Kondou et al., because the teachings provide the same wherein the factors of resistance and inductance are used to provide the difference signals of the d-axis and the q-axis.

Allowable Subject Matter

Allowable Subject Matter

3. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 3, 5, 7-10, and 12-14 are allowed.

Response to Arguments

5. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marlon T Fletcher whose telephone number is 571-272-2063. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2107.



Marlon T Fletcher
Primary Examiner
Art Unit 2837

MTF
April 18, 2004